

What is claimed is:

1 1. A method for fabricating an interconnect
2 structure, comprising the steps of:

3 forming a first metal layer on a substrate;

4 forming a dielectric layer on the substrate,
5 covering the first metal layer;

6 forming a first and second via hole in the
7 dielectric layer exposing one end of the first
8 metal layer, wherein the first via hole is
9 nearer the end of the first metal layer than
10 the second via hole;

11 filling the second via hole to form a conductive via
12 plug to electrically connect the first metal
13 layer; and

14 forming a second metal layer on the dielectric layer
15 to electrically connect the conductive via
16 plug.

1 2. The method as claimed in claim 1, wherein the
2 substrate is a TFT-array substrate for an LCD panel.

1 3. The method as claimed in claim 2, wherein the
2 first metal layer is formed simultaneously with a gate
3 metal layer of a TFT array.

1 4. The method as claimed in claim 2, wherein the
2 second metal layer is formed simultaneously with a
3 source/drain metal layer of a TFT array.

1 5. The method as claimed in claim 2, wherein the
2 second via hole is filled with the second metal layer.

1 6. The method as claimed in claim 5, further
2 comprising filling the first via hole simultaneously with
3 the second via hole to form two conductive via plugs.

1 7. The method as claimed in claim 2, wherein the
2 second metal layer is formed to bypass the first via
3 hole.

1 8. The method as claimed in claim 7, further
2 comprising forming a second dielectric layer to fill the
3 first via hole and cover the second metal layer and the
4 first dielectric layer.

5 9. An interconnect structure, comprising:
6 a substrate;
7 a dielectric layer disposed on the substrate;
8 a first metal layer disposed in the dielectric
9 layer, having a first and second end;
10 a second metal layer disposed on the dielectric
11 layer, wherein the second metal layer is
12 isolated from the first metal layer by the
13 dielectric layer; and
14 a plurality of conductive plugs disposed in the
15 dielectric layer and on the first end of the
16 first metal layer to electrically connect the
17 second metal layer.

1 10. The interconnect structure as claimed in claim
2 9, wherein the substrate is a TFT-array substrate for an
3 LCD panel.

1 11. The interconnect structure as claimed in claim
2 10, wherein the first metal layer and the second metal
3 layer are a gate metal layer and a source/drain metal
4 layer of a TFT array respectively.

1 12. The interconnect structure as claimed in claim
2 9, wherein the number of conductive plugs is from 2 to 5.

1 13. The interconnect structure as claimed in claim
2 9, wherein the conductive plugs disposed on the first end
3 of the first metal layer electrically connect one end of
4 the second metal layer.

1 14. An interconnect structure, comprising:
2 a substrate;
3 a dielectric layer disposed on the substrate;
4 a first metal layer disposed in the dielectric
5 layer, having a first and second end;
6 a second metal layer disposed on the dielectric
7 layer; and
8 a plurality of plugs disposed on the first end of
9 the first metal layer, wherein the plug farther
10 from the first end of the metal layer is
11 conductive and electrically connects the second
12 metal layer.

1 15. The interconnect structure as claimed in claim
2 14, wherein the substrate is a TFT-array substrate for an
3 LCD panel.

1 16. The interconnect structure as claimed in claim
2 14, wherein the number of plugs is from 2 to 5.

1 17. The interconnect structure as claimed in claim
2 14, wherein the conductive plug electrically connects one
3 end of the second metal layer.